The Role of Private Providers in Maternal and Child Health and Family Planning Services in Developing Countries

Peter Berman
Associate Professor of International Health Economics
Department of Population and International Health
Harvard School of Public Health

AND

Laura Rose
The World Bank

November, 1994

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

Much of the data analysis in this report was done by Gustavo Angeles and Oleh Wolowyna of the Research Triangle Institute. In addition, we benefited greatly from Dr. Wolowyna's expertise in survey design and familiarity with DHS survey data.

INTRODUCTION

The role of the private sector in providing health care services in developing countries is of great interest to both international donors and national ministries of health. It is often assumed that private providers will be a more efficient and higher quality alternative to public sector providers and a way to increase overall resources available in the health sector (Griffin, 1989).

However, even descriptive data about the private sector in most developing countries is lacking. Because the private sector is not regulated, there are few official data sources on its size and composition. Research in this area is nascent and encountering numerous methodological problems in defining and characterizing the private sector.[1]

In addition to the paucity of descriptive data about the size and composition of the private health care provision sector, we know little about the demand for and utilization of the services they provide. A handful of health care demand studies have been completed using data from developing countries, however, these studies have usually estimated the demand for curative health services. Recent exceptions are Schwartz and Akin (1988) and Alderman and Gertler (1989).

The purpose of this paper is to describe and analyze the utilization of the private sector for maternal and child health and family planning services in developing countries. Given that these services are considered to be priorities by many countries, is there potential to increase their utilization through the private sector? These questions are best answered by household surveys that can determine the availability of different types of providers and the consumer's choice of provider. National household surveys are, however, costly undertakings. Therefore, a practical first step is to analyze existing survey data.

This paper uses Demographic and Health Survey (DHS) data to describe and analyze the role of private health care providers in meeting the public health needs of women and children in developing countries. Using DHS data from eleven developing countries, we compare the utilization of the private sector with that of the public sector for tetanus toxoid vaccination, deliveries, treatment of diarrheal disease, treatment of acute respiratory infections, and family planning services.

The paper is organized as follows: First, we begin with a description of the DHS data and the methods used to categorize providers and to analyze the utilization rates. Next, we provide an overview of the health sector for each country, including what is currently known about the size and composition of the private sector. The results are presented in Section IV, organized by type of health service. We conclude with some general observations on the variations in utilization of the private sector for public health services between countries and types of service.

[1/] **Many of these issues are discussed in Berman and Rannan-Eliya (1993).**

DATA AND METHODS

The Demographic and Health Surveys program (DHS), funded by the United States Agency for International Development, has assisted more than thirty countries to implement surveys on population and maternal and child health since 1985. Data from the DHS surveys include information on fertility and childhood mortality levels, the use of family planning, attitudes towards fertility and family planning, marital status, breast-feeding, various maternal and child health indicators, anthropometry, and socioeconomic characteristics.

The surveys have large national samples of women of childbearing age. Data on child health were collected from all children under the age of five. Table 1 summarizes the characteristics of the eleven DHS surveys included in this analysis. These countries were chosen because the data were sufficiently detailed to allow comparisons between the public and the private sector.

However, as seen in Table 2, even in those countries with the best data, the range of data available was limited. In general, the detail found in the family planning questions was not found in the questions for other types of services. Even within the same country survey, ten providers might be listed as options for family planning while for diarrhea, only three were listed. We were unable to use much of the DHS data for this analysis because many countries only defined the level of services utilized (pharmacy, doctor, hospital) and not whether the provider was in the public or private sector.

The basis for classifying providers into public, private, or other was not always obvious or consistent. We relied primarily on the classification adopted by each country when they analyzed the data.[2] For consistency, we included traditional providers in the "other" category. In only a few cases were traditional providers used more than 5% of the time. Schools, churches, family and friends, and others are also included in the "other" category. Pharmacies, unless otherwise specified in the survey, were providers were classified as public sector. Other variable definitions also raise questions of comparability between countries The DHS surveys were modified to reflect the specific environment of each country. Some terms such as "diarrhea" were left to the respondent to define. Earlier analysis of the DHS surveys has shown that the accuracy and completeness of reporting diarrhea varies considerably between countries and between socioeconomic groups (Boerma et al., 1991). Systematic differences between countries in the probability of reporting an illness, could, of course, affect the reported pattern of service use as well. Unfortunately, there is no way to know the direction of such biases, if they exist, on this analysis.

[2/] In nearly all countries, the data on family planning were recoded into public, private, and other categories. It was possible to work backwards and determine which providers were coded as public, and which were coded as private. We then assumed the same classification for the other types of services. While this gives us consistency within a country, we cannot be sure of the consistency between countries.

In order to make our analysis comparable between countries, we limited the sample to ever married women (EMW). Unless otherwise specified, the sub-samples for each type of service analyzed in this paper are defined as follows:

1. TT Vaccination: currently pregnant women who received at least one dose of TT during the current pregnancy;

2. Delivery: all live births in the last five years;

3. Treatment of Diarrhea: all live children under the age of 5 who had diarrhea in the last two weeks and were taken for treatment;

4. Treatment of Acute Respiratory Infections: all live children under the age of 5 who had cough and/or fever in the last 2 (or 4) weeks and were taken for treatment;

5. Family Planning: women currently not pregnant who are currently using modern contraceptive methods (in Indonesia, Tunisia, and Morocco only for currently married women).

A major limitation of the DHS data is the absence of substantive indicators of family income. Additionally, there are no data on price or quality of health-care services, which obviously affect utilization and choice of provider. Therefore, the analysis that can be done is primarily descriptive. When possible, the samples were weighted in order to be representative of the national populations.

ECONOMIC AND HEALTH SECTOR SITUATIONS IN THE STUDY COUNTRIES

The countries included in this analysis vary greatly in both their levels of economic development and the structure and financing of their health-care systems. Table 3 compares the size, urbanization, income, and infant mortality rates of the countries. With the exception of Botswana, the African countries are less urbanized and have lower GNPs per capita than the countries in the other regions.

With these characteristics, one might expect that the private sector utilization would be lower in the African countries — constrained by both supply (insufficient population concentration for multiple providers) and by demand (insufficient resources to spend on health care). Preliminary research by Berman and Hanson (1994) however, suggests that while income is an important determinant of total quantity of services provided, it is unrelated to the proportion of providers that are private. Data in Table 4 support this finding — while the quantity of physicians and hospital beds per capita is lowest in the African countries and higher in the Latin American countries, the proportion of providers in the private sector is higher in Africa for the few countries where data are available.

The goal of our analysis was to examine the overall level of utilization of the private sector for each of the services described above and to compare the level of use between countries and between services within a country. In addition, we also explored the variation in use of the private sector by selected socioeconomic characteristics. The characteristics we chose were place of residence (urban or rural); mother's age (in 5 year groups); mother's education (non, primary, secondary, and higher); and mother's current employment status (working or not working).

While we have little data on the size of the private sector, Table 5 illustrates that private health expenditures are significant in most of the countries included in this analysis. In the Sudan, 85 percent of total health expenditures are estimated to be private expenditures. The amount of private expenditures as a percentage of total health expenditures was below 40 percent in only two countries (Kenya and Tunisia). However, little is known about what types of services people are purchasing in the private sector. While this analysis has no information on expenditures, it does attempt to describe the extent to which the private sector is used for maternal and child health and family planning service.

LEVELS OF PRIVATE SECTOR USE: BY INTERVENTION AND BY COUNTRY

This section summarizes the results of tabulations of usage patterns of private providers for the different interventions covered by the DHS surveys. In addition, we review patterns within countries to determine whether there is a consistent pattern of high or low use for other services and when private use is high or low for some services

Tables 6 and 7 present the percentages of respondents reporting service use who received care from public, private, and other types of providers. These figures can be treated as "conditional probabilities" of private sector use, i.e. conditional on a prior decision to use services or seek treatment.

Figure 1 displays the results for source of maternal tetanus toxoid vaccination , which was reported in five countries. In all of them more than three quarters of vaccinations were obtained from public providers. Only Uganda reported significant private provision of this service, at 20 percent.

The survey questions concerning deliveries mainly concerned identifying the location of the delivery in terms of public or private clinics and hospitals or home delivery. However, this information does not provide a firm indication of who attended the delivery and whether they did so in a public or private capacity. For example, it is possible that a private physician or midwife would attend delivery in a public hospital. A publicly employed provider might also attend in a private facility in a private practice role. A public or a private provider could attend a home birth. Most of the home births were probably attended by traditional birth attendants, who are generally private practitioners although they may receive government-financed training and supplies. In Indonesia, home births might also be attended by publicly employed midwives, however they might frequently do this in a private capacity, receiving fee-for-service payment. Figure 2 indicates that, in three of the four countries providing data on deliveries, home births accounted for more than 60 percent of all live births reported in the last 5 years. Facility-based births dominated only in Tunisia, where public facilities accounted for more than 60 percent of the total. It is likely that private providers are the dominant source of birth attendance.

The data on treatment of diarrhea vary substantially in detail from country to country. For example, in Indonesia, 12 alternative sources of diarrhea treatment were noted, including four levels of government provider (village health worker through hospital), seven types of private providers ranging from drug shops to private hospitals, and other. In contrast, for Kenya and Uganda, the question listed only private doctor, hospital/

clinic, and other, making it impossible to identify private providers (these data were not used). Figure 3 shows the breakdown of sources of treatment for diarrhea in terms of public, private, and other types of providers. It is likely that "other" includes private providers as well, although probably those with lesser qualifications.

The results from eight countries are split. In four countries: Botswana, Sudan, Morocco, and Tunisia, public providers account for more than 60 percent of the treated diarrhea cases, with Botswana close to 100 percent. In Bolivia, public providers account for just over half the cases — 52 percent. In the other three countries, Guatemala, Paraguay, and Indonesia private practitioners and other account for more than 60 percent.

The questions on source of treatment for childhood acute respiratory infections were similar to those for diarrhea and are also presented in Figure 3. Data on public and private sector treatments were only available for five countries. All of these had information on diarrhea as well. The patterns were fairly similar. In Botswana and Sudan public providers were dominant. In Bolivia, just over half (56 %) of treated ARI was taken to public providers. In Paraguay and Indonesia private providers were a more frequent source of treatment.

Figure 4 presents that results for source of family planning services. Since this was one of the core questions of the DHS, data are available for all countries we reviewed. They follow a predictable pattern. For the Latin American countries, non-government providers are the dominant source of family planning services, over 60 percent in all cases. This reflects the reluctance of many Latin American countries for state activism in promoting or providing family planning services. In contrast, in much of Africa, the Middle East, and Asia family planning has been predominantly a government initiative. In these countries, a large non-government provision role was reported from Uganda and Sudan (47 and 42 percent of users respectively), with Kenya and Indonesia reporting somewhat less private provision.

Only two countries provided data on ante-natal care. In Morocco, about half of those receiving this preventive service reported use of private providers. In Tunisia, only a quarter used the private sector.

Overall, the results support expected patterns. For the more "public goods" type of service, those with important market failures on the demand side such as immunization and family planning, private providers play a minor role in most countries reviewed. These public goods are services for which private demand would be expected to be weak at least at the advent of making the service or technology available. This corresponds with limited private supply of such services, hence low reported levels of actual private provision.

In contrast, the treatment of symptomatic and common illness is a major source of

private demand for health care — in fact one of the major functions of most private providers, including those without formal medical qualifications. For such services, private provision is more common. We should expect to find similar results for treatment services for many common diseases, including those which are the focus of intensive public health campaigns, such as tuberculosis and malaria.

Attendance at deliveries presents a more complex case. There is significant private demand for birth attendance, although it may not be for modern clinical skill. There is also significant public provision, in the form of medical and midwife personnel. There is also public intervention to modify private provision in terms of training and supplies for traditional birth attendants. Unfortunately, the DHS data do not permit an assessment of the relative roles of different public and private providers in birth attendance. They do, however, indicate strongly that the main venue of such provision is the home.

Another way of looking at the DHS data would be in terms of patterns within countries. Is a low or high degree of private service provision consistent across different types of services or is the private provision role more haphazard? Data were available for eight countries with at least three different types of services reported: one country had five services, five countries had four services, and two countries had three services. For simplicity, the data are presented as the proportion of service use at all non-government providers, i.e. combining private and "other".

Figures 5 and 6 present results for two groups of countries, those with fairly consistent levels of private provision across the different services for which data were available (Group I) and those with substantial variation across services (Group II). In Group I (Figure 5) Botswana and Tunisia both report low levels of non-government service use across all the services estimated. In contrast, Paraguay reports fairly high levels of non-government service use.

In Group II (Figure 6) there is substantial variation. Indonesia reports a high level of public provision for family planning, but not for other services (NB: in these figures deliveries are presented for type of location not type of provider, as discussed above). In Bolivia, TT immunization is predominantly government provided, treatment of childhood illness has significant private sector provision, and family planning is largely privately provided. Guatemala also has a high level of public provision for TT immunization, but much lower levels for diarrhea treatment and family planning services.

While these results do provide a single universal pattern, they do suggest that within some countries public provision also initially dominates the more public goods, while private providers remain important for a wide range of privately demanded services.

THE ROLE OF INDIVIDUAL AND HOUSEHOLD FACTORS IN PREFERENCE FOR PRIVATE PROVIDERS

As noted above, the DHS collect data on a variety of individual demographic and socio-economic characteristics. Most of these apply to the main DHS respondents, mothers and women of child-bearing ages. Sex of the child is also available for services provided to children. In terms of demographic measures, we analyzed women's age and child sex.

Household socio-economic status is not well measured in the DHS. No direct measures of economic status are available, such as income, expenditures, or substantial measures of household assets. Socio-economic factors must therefore be represented by associated measures. We used women's education, women's reported employment status (a dichotomous variable of working or not), and urban or rural location of residence. While we recognize that these are crude measures, particularly on the household economics side, they do provide some useful insights.

Table 7 summarizes a descriptive review of the association of these variables with the probability of use of private providers for the different interventions. The table reflects any systematic relationships that appear across all the countries reporting results for each type of intervention. There may however also be health effects within an individual country which are not reflected.

The number of countries reporting each type of intervention is noted in the second column of the table. While family planning use patterns were included in all the surveys (11), of the health questions only diarrhea treatment was included in more than half the surveys reviewed. Other questions were available in four or five countries out of eleven, and not the same four or five countries. Since the countries in this review were selected on the basis of having more relevant data available, it should be clear that the non-systematic collection of health-related data across DHS countries seriously impedes comparative studies of this type.

Overall, urban residence, higher levels of education, and formal employment are positively associated to varying degrees with use of private sector services for all the interventions reviewed. This corresponds well with the general observation that private service supply is greater in urban areas and more likely to reach those of higher socio-economic status. These associations, however, do not indicate that private service provision is insignificant in rural areas or for households with women with less schooling,

which may make up a large portion of the high risk groups targeted for interventions like diarrheal disease control. As discussed above, the importance of these findings will vary with the overall level of private provision, which is greater for those "non-public" goods for which there is substantial private demand. This is particularly important for the treatment interventions relating to childhood illnesses: diarrhea and ARI. Each of the interventions will be discussed in turn in the following paragraphs.

TT immunization is mainly provided by the public sector. The limited non-government provision shows some evidence of bias towards urban households with better educated mothers, although this is probably not of great significance in the overall coverage of high risk groups with TT vaccine. (Berman *et al* 1993 provides evidence from Indonesia of how effectiveness of TT immunization may increase with better coverage of rural women with lower levels of education).

Analysis of delivery services focuses on deliveries done in private facilities, since we cannot identify public or private provision in those reported as home deliveries. Private facility deliveries made up between 4 and 11 percent of all deliveries reported in the four countries and were biased towards urban areas and better educated mothers. The only association found between private sector use and women's age was for place of delivery, with women in the middle child-bearing ages (25-34) being more likely to use private facilities. This may include associations with income (younger women may be poorer on average) and parity.

The two treatment interventions: diarrhea and ARI, showed high levels of government provision in the African (Botswana and Sudan) and Middle Eastern (Tunisia and Morocco) countries reporting. The former may reflect lack of supply, while the latter may be better interpreted as the result of more systematic public provision policies. Non-government provision was dominant in Indonesia, Bolivia, Paraguay, and Guatemala. Across all these countries there was a general tendency for private provision to be more prevalent in urban areas and for households with employed and better educated mothers. However, the differences were not that large, as shown in Figure 7. In other words, private provision of these services is substantial even for rural and lower socio-economic group households and may merit more attention.

For family planning services, the pattern of public and private provision shows strong regional variation, with private provision dominant in Latin America and public provision dominant in the other countries. Although the levels of use differ, the association of private sector use with urban residence, female education, and employment is positive and similar across all the countries. We found no systematic link across countries between private sector use and type of contraceptive provided.

SUMMARY AND CONCLUSIONS

Using the available DHS data from eleven developing countries, we analyzed the role of the private sector in meeting the needs for maternal and child health and family planning. These services are considered to be priorities by most countries, however, little is known about where women seek these services for themselves and for their children. As many countries move toward a larger role for the private sector in the provision of health care services, they must address the realistic potential for the private sector to provide these public health services. A first step in this process is to determine the extent to which these services are currently provided by the private sector.

This analysis has shown that overall, private sector use reflects expected patterns: lower for the more "public" goods with significant demand side market failures such as immunization and family planning, and higher for more private goods such as treatment of childhood diseases. In some countries, particularly those in Latin America, and Indonesia, the levels of private sector utilization are quite high — often more than half of the treatments for diarrhea and ARI are provided in the private sector. In contrast, vaccinations continue to be provided almost entirely by the public sector. An insufficient number of countries had data on deliveries or prenatal care for us to draw many conclusions.

These patterns may be significantly modified by country-specific conditions, affecting both demand and supply. For example, in Latin America, the lower level of state action in family planning has resulted in a dominance of private provision for that service. In Africa, constraints to both private demand and supply related to general economic conditions may limit private provision, even of illness treatments. Where incomes permit, for example in Botswana, or Tunisia and Morocco, policies to assure public provision of service also significantly affect the public-private mix of provision.

Does the evidence suggest private provision may be a significant factor in the priority public sector health and population agenda? The answer from this review is a qualified yes. To the extent that primary curative interventions offer potential for cost-effective health improvements, it is likely that private providers are an important source of services in many countries. However, based on the DHS data we can only describe use patterns for two childhood diseases. More data are needed on significant adult and reproductive health morbidities. For the more "public" goods of immunization and antenatal care, the limited evidence suggests the role of private providers remains small. In family planning, private provision is significant in some countries, depending on local conditions.

The analysis that is possible with existing DHS data is very elementary and omits many important variables. For example, without information on the quality of public and private services, one cannot determine whether high levels of private use enhance the

overall coverage with priority services or are a detriment to health. National data on the overall supply of private provision are generally lacking, making it impossible to determine the relative importance of private sector use in national health care systems. Price variables for providers and important individual and household characteristics such as income and perceptions of quality also limit our ability to explain different patterns of public and private sector use. The descriptive analysis we have done is suggestive of behavioral factors operating on both the supply and demand side, but insufficient to evaluate it or to recommend appropriate actions.

A further constraint has been the limited and ad hoc inclusion of health-related questions in the DHS. Although the DHS is the most significant global effort to date to study maternal and child health services cross-nationally, health-related questions have been applied unevenly. This limits the potential for comparative analyses. The difficulty is compounded by inadequate definitions of key terms, such as that for "public" and "private" provider and different types of provider within these categories.

There is growing recognition internationally that privately provided health care is widespread and significant in reaching the general population, including the poor and those at risk for many priority problems. Privately provided services should contribute more to national health goals — especially where national resources are limited and private providers already comprise an acceptable source of services to much of the population. Wise policies to derive more benefit from these national resources require better understanding of what private providers provide, to whom, and at what level of quality, price, and cost. The DHS can make an important contribution to this knowledge. Further analysis of the existing surveys is certainly needed, along with improvement of future surveys.

BIBLIOGRAPHY

Alderman, H. and P. Gertler. *The Sustainability of Public and Private Health Care for the Treatment of Children in Pakistan.* **Living Standards Measurement Study Working Paper No. 57. The World Bank. Washington, D.C. 1989.**

Azelmat, M., Ayad, M., and Belhachmi, H. *Enquete Nationale sur la Planification Familiale, La Fecondite et la Sante de la Population au Maroc (ENPS) 1987.* **Rabat, Maroc and Columbia, Maryland: Ministere de la Sante Publique and Institute for Resource Development/Westinghouse, March 1989.**

Berman, P., Quinley, J., Anwar, S., Yusuf, B., Muslaini, U.M., & Asmara, H. *Assessing the Options for Maternal Tetanus Immunization in Indonesia: A Cost-Effectiveness Analysis of Field Experiences.* **John Hopkins University/Indonesia Ministry of Health. 1989**

Berman, P. and Hanson,K. *Non-Government Financing and Provision of Health Services in Africa: A Background Paper.* **Data for Decision Making, Harvard School of Public Health. Boston, MA. 1994**

Berman, P. and Rannan-Eliya, R. *Factors Affecting the Development of Private Health Care Provision in Developing Countries.* **Health Financing and Sustainability Project. ABT Associates Inc. Bethesda MD. 1993**

Central Bureau of Statistics (Indonesia), National Family Planning Coordinating Board (Indonesia), and Macro International Inc (USA). *Indonesia Demographic and Health Survey, 1991.* **Jakarta, Indonesia and Columbia, Maryland, October 1992.**

Deluis, A. and Lule, J. *The Public/Private Mix in Financing and Provision of health Services in Uganda.* **Discussion paper presented at the Public/Private Mix Workshop at the London School of Hygiene and Tropical Medicine, London: January 1993.**

Griffin, C.C. *Strengthening Health Services in Developing Countries through the Private Sector.* **Discussion Paper No. 4. The World Bank and International Finance Corporation. Washington, D.C. 1989**

Kaijuka, E., Kaija, E., Cross, A., and Loaiza, E. *Uganda Demographic and Health Survey, 1988/1989.* **Entebbe, Uganda and Columbia, Maryland: Ministry of Health in Collaboration with the Ministry of Planning and Economic Development, Department of Geography - Makerere University, Institute of Statistics and Applied Economics -Makerere University, and Institute for Resource Development/Macro Systems, Inc.,October 1989**

Lesetedi, L., Mompati, G., Khulumani, P, Lesetedi, G., and Rutenberg, N. *Botswana Family Health Survey II, 1988.* **Gaborone, Botswana and Columbia, Maryland: Central Statistics Office, Ministry of Finance and Development Planning; Family Health Division, Ministry of Health; and Institute for Resource Development/Macro Systems, Inc., August 1989.**

Ministerio de Salud Publica y Asistencia Social. *Encuesta Nacional de Salud Materno Infantil, 1987.* **Guatemala and Columbia, Maryland: Institito de Nutricion de Centro America y Panama and Institute for Resource Development/Westinghouse, May 1989.**

National Council for Population and Development (Kenya) and Institute for Resource Development/Macro Systems, Inc. (USA). *Kenya: Demographic and Health Survey, 1989.* **Nairobi, Kenya and Columbia, Maryland: October 1989.**

Pan American Health Organization. *Health Conditions in the Americas, 1990 Edition, Volume II.* **Washington, DC: 1990.**

Profamilia and Institute for Resource Development/Macro International, Inc. *Colombia: Encuesta de Prevalencia, Demografia y Salud, 1990.* **Bogota, Colombia and Columbia, Maryland, June 1991.**

Schwartz, J.B., Akin, J.S., and Popkin, B. *Price and Income Elasticities of Demand for Modern Health Care: The Case of Infant Delivery in the Philippines.* **The World Bank Economic Review. V. 2:1, p. 49-76, 1988.**

Sommerfelt, A., Boerma, J., Ochoa, L., and Rutstein, S. *Maternal and Child Health in Bolivia: Report on the In-depth DHS Survey in Bolivia.* **Columbia, Maryland: Institute for Resource Development/Macro Systems, Inc., April 1991**

The World Bank. *Staff Appraisal Report, Kingdom of Morocco: Health Development Project.* **Population, Health and Nutrition Department, Washington, DC: May 1985.**

The World Bank. *World Development Report 1993: Investing in Health.* **Oxford University Press, New York: 1993.**

Appendix 1

TABLE 1 **Summary of DHS Surveys Included in Analysis**

Region/Country	*Code*	*Year*	*Respondents*	*Sample Size*
		Latin America & Caribbean Region*		
Bolivia	BOL	1989	All women 15-49	7,923
Colombia	COL	1990	All women 15-49	8,644
Guatemala	GUT	1987	All women 15-44	5,160
Paraguay	PAR	1990	All women 15-49	6,262
		African Region		
Botswana	BOT	1988	All women 15-49	4,368
Kenya	KEN	1988/89	All women 15-49	7,150
Sudan	SUD	1989/90	Ever-married women 15-49	5,860
Uganda	UGA	1988/89	All women 15-49	4,730
		Asia & Near East Region		
Indonesia	IND	1991	Ever-married women	22,909
Morocco	MOR	1987	Ever-married women	5,982
Tunisia	TUN	1988	Ever-married women	4,184

*Regions are those used by USAID

TABLE 2 Data Available by Country and Type of Health Service

Country	*TT/Vacc*	*Delivery*	*TX of Diarrhea*	*TX of ARI*	*Family Planning*
			Latin America and Caribbean		
Bolivia	X	X	X	X	X
Colombia					X
Guatemala	X		X		X
Paraguay			X	X	X
			African Region		
Botswana	X		X	X	X
Kenya					X
Sudan	X		X	X	X
Uganda	X				X
			Asia and Near East Region		
Indonesia		X	X	X	X
Morocco		X	X		X
Tunisia		X	X		X

TABLE 3 Basic Indicators

Country	*Population (millions)*	*Percent Urban*	*GNP per Capita (US $)*	*Infant Mortality Rate*
		Latin America and Caribbean*		
Bolivia	7.30	52	650	83
Colombia	32.80	71	1,260	23
Guatemala	9.50	40	930	60
Paraguay	4.40	48	1,270	35
		African Region		
Botswana	1.30	29	2,530	36
Kenya	25.00	24	340	45
Sudan	25.80	22	NA	84
Uganda	16.90	11	170	107
		Asia and Near East Region		
Indonesia	181.30	31	610	36
Morocco	25.70	49	1,030	43
Tunisia	8.20	55	1,500	21

NOTES: Data are for 1991

NA=data not available

SOURCE: World Development Report, 1993

*These are regions as defined by USAID

TABLE 4 Public and Private Provision of Health Care

Country	*Physicians per 1000 pop (88-92)/a*	*Percent Physicians in Private Sector*	*Inpatient Beds per 1000 pop (85-90)/a*	*Percent of Beds in Private Sector*
	Latin America and Caribbean			
Bolivia	0.48		1.3	13/b
Colombia	0.87		1.5	16/c
Guatemala	0.44	NA	1.7	18/b
Paraguay	0.62	5/c	1.0	11/b
	African Region			
Botswana	NA	NA	NA	NA
Kenya	0.14	40/c	1.7	3/c
Sudan	0.09	NA	0.9	NA
Uganda	0.04	NA	0.8	57/d
	Asia and Near East Region			
Indonesia	0.14	6/c	0.7	31/e
Morocco	0.21	50/f	1.2	NA
Tunisia	0.53	36/c	2.0	NA

NOTES:

a: World Development Report, 1993

b: PAHO, 1990

c: Berman and Hanson, 1994

d: Delius and Lule, 1993

e: World Bank, 1985

f: World Bank, 1985

TABLE 5 Health Care Expenditures

Country	*Total Health Expenditures per Capital (US $ - 1990)*	*Private Expenditures as a Percent of Total*
	Latin America and Caribbean	
Bolivia	25	40
Colombia	50	55
Guatemala	31	43
Paraguay	37	57
	African Region	
Botswana	NA	NA
Kenya	16	37
Sudan	12	85
Uganda	6	53
	Asia and Near East Region	
Indonesia	12	65
Morocco	26	61
Tunisia	76	33

Source: World Bank, 1993

TABLE 6 Use of Selected MCH and Family Planning Services in Public and Private Sector (Percent of Respondants Reporting Use of Each Type of Provider)

Country	TT Vaccination				Prenatal Care				Delivery				
	PU	PR	OT	Total	PU	PR	OT	Total	PU	PR	HO	OT	Total
LAC													
Bolivia	83.70	2.10	14.20	100.0		NA			27.40	10.40	61.00	1.30	100.0
Columbia		NA				NA					NA		
Guatemala	80.60	3.00	16.40	100.0		NA					NA		
Paraguay		NA				NA					NA		
AFR													
Botswana	100.0	0.00	0.00	100.0		NA					NA		
Kenya		NA				NA					NA		
Sudan	95.80	3.20	1.00	100.0		NA					NA		
Uganda	74.10	20.90	4.90	100.0		NA					NA		
ANE													
Indonesia		NA				NA			9.10	11.50	79.00	0.40	100.0
Morocco		NA				NA			18.90	4.60	76.50	0.00	100.0
Tunisia		NA				NA			63.90	4.20	31.70	0.20	100.0

Notes: PU=public, PR=private, HO=home, OT=other, NA=data not available

Source: DHS Surveys

TABLE 6 Use of Selected MCH and Family Planning Services in Public and Private Sector (Percent of Respondants Reporting Use of Each Type of Provider) (continued)

Country	Treatment of Diarrhea				Treatment of ARI				Family Planning			
	PU	PR	OT	Total	PU	PR	OT	Total	PU	PR	OT	Total
LAC												
Bolivia	51.80	32.60	15.60	100.0	55.90	37.10	7.20	100.0	33.70	63.50	2.70	100.0
Columbia	NA				NA				27.00	69.40	3.70	100.0
Guatemala	29.90	48.70	21.50	100.0	NA				35.50	61.90	2.80	100.0
Paraguay	32.10	55.90	12.20	100.0	10.40	54.40	4.90	100.0	10.40	83.70	6.00	100.0
AFR												
Botswana	94.20	3.80	2.10	100.0	98.40	1.10	0.50	100.0	92.70	7.30	0.10	100.0
Kenya	NA				NA				71.20	27.60	1.30	100.0
Sudan	77.50	18.00	4.50		75.20	22.20	2.60	100.0	58.30	35.90	5.70	100.0
Uganda	NA				NA				53.10	44.10	2.90	100.0
ANE												
Indonesia	40.10	50.60	9.30	100.0	40.30	53.80	5.90	100.0	76.10	21.70	2.20	100.0
Morocco	70.80	23.30	5.80	100.0	NA				62.00	21.40	16.60	100.0
Tunisia	68.00	31.00	1.00	100.0	NA				76.50	22.40	1.00	100.0

Notes: PU=public, PR=private, HO=home, OT=other, NA=data not available

Source: DHS Surveys

TABLE 7 Effect of Demographic and Socio-economic Individual Variables on Probability of Private Provider Use

	# of Countries Reporting	Demographic Variables		Socio-economic Variables		
		Mother's Age	Child Sex	Mother Working	Mother's Education	Urban Residence
Tetanus Toxoid	4	No effect	NA	Africa (2) + LA (2) -	+	+
Place of Delivery (private facility)	4	Higher in mid child-bearing ages	NA	+	+	+
Diarrhea Treatment	8	No effect	No effect	+	+	+ (except Paraguay)
ARI Treatment	5	No effect	Slightly higher for females in LA	+ (small difference)	+	+ (small difference)
Family Planning	11	No effect	NA	+	+	+

NA means measure not applicable

"+" signifies variable positively associated with probability of private provider use

"No effect" means no systematic effect discernable across countries reporting. Effect might be present in individual countries, see text.

FIGURE 1

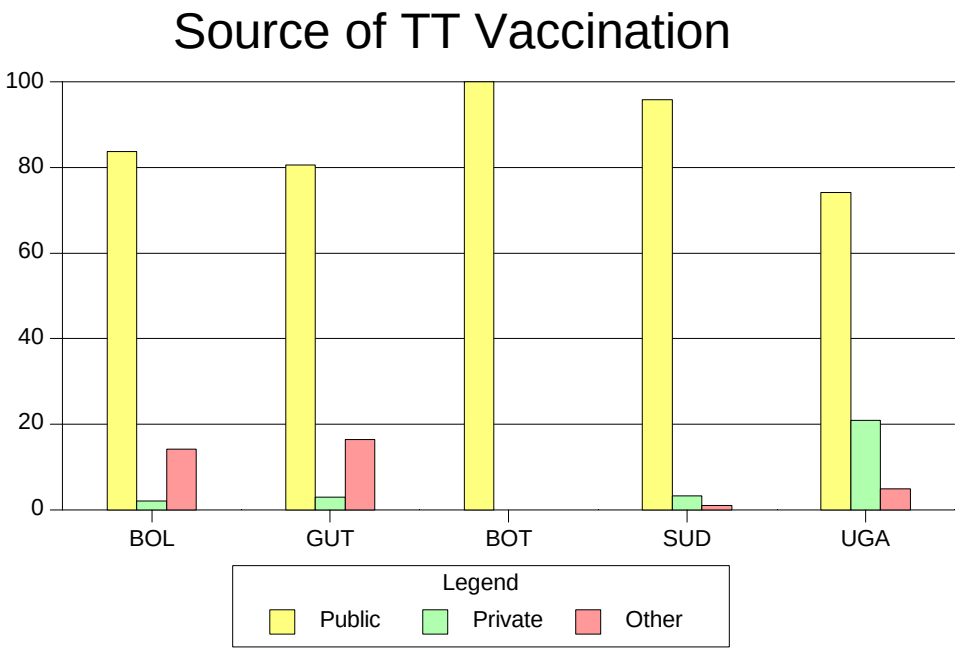


FIGURE 2

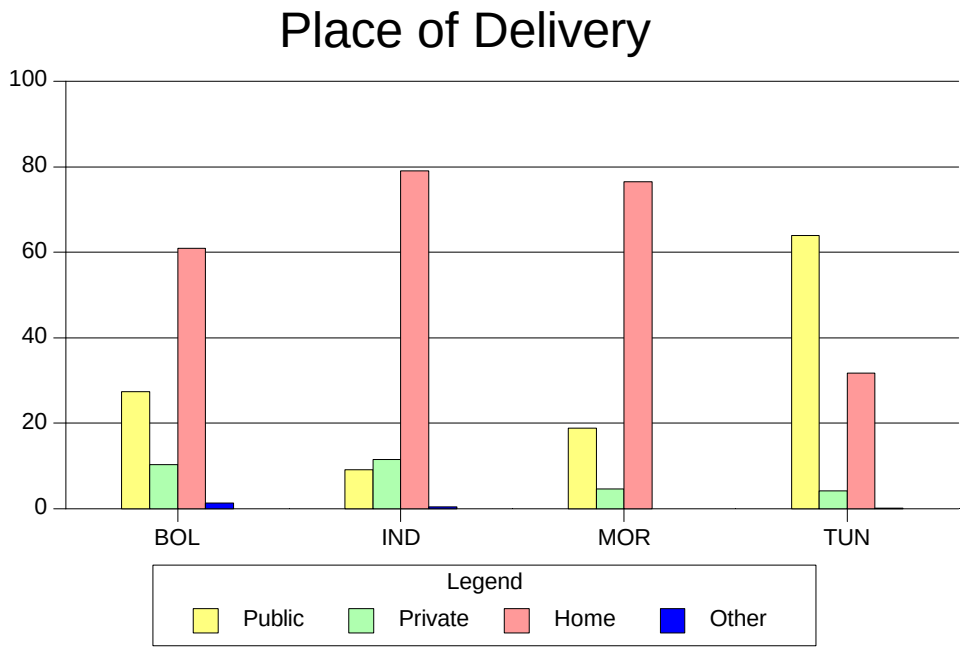
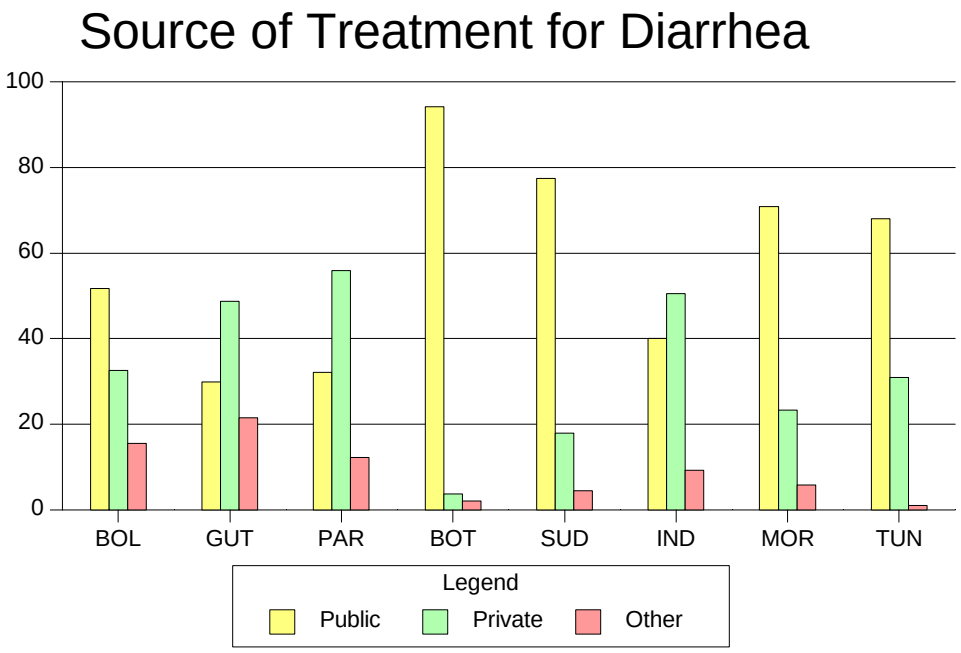


FIGURE 3


Source of Treatment for Diarrhea
100
80
60
40
20
0
BOL
GUT
PAR
BOT
SUD
IND
MOR
TUN
Legend
Public
Private
Other

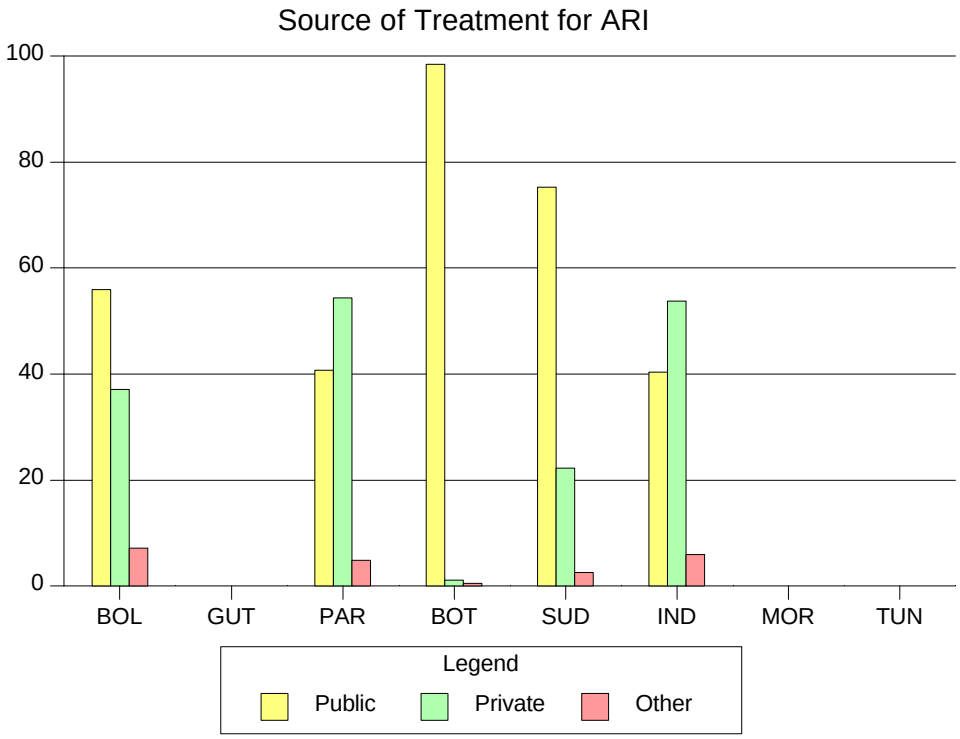

Source of Treatment for ARI
100
80
60
40
20
0
BOL
GUT
PAR
BOT
SUD
IND
MOR
TUN
Legend
Public
Private
Other

FIGURE 4

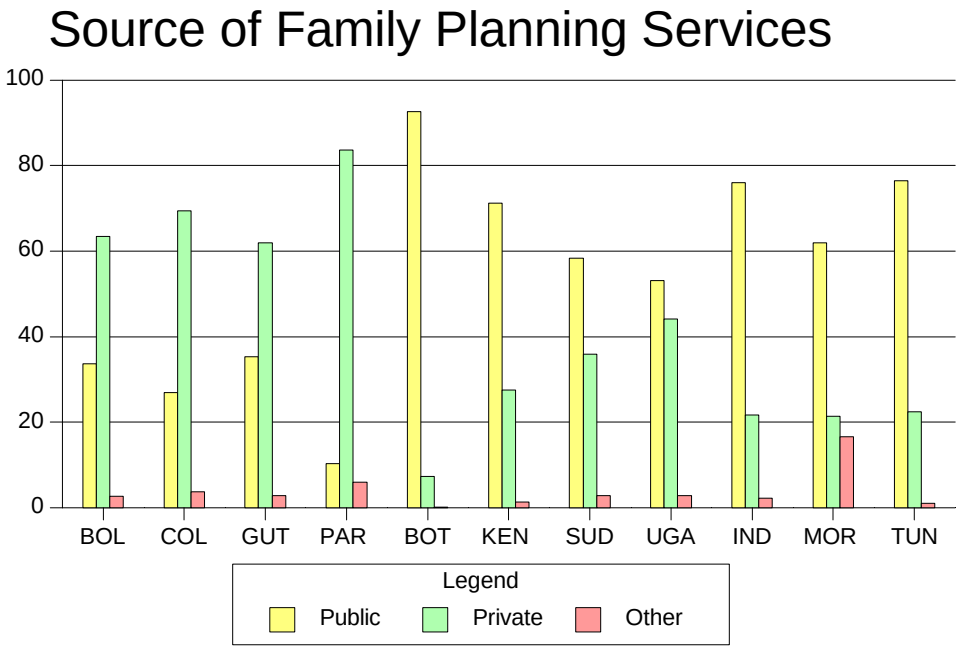
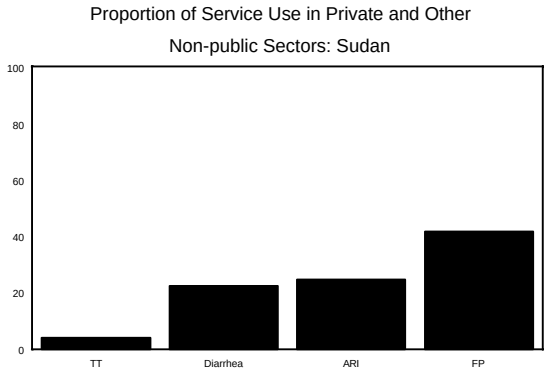
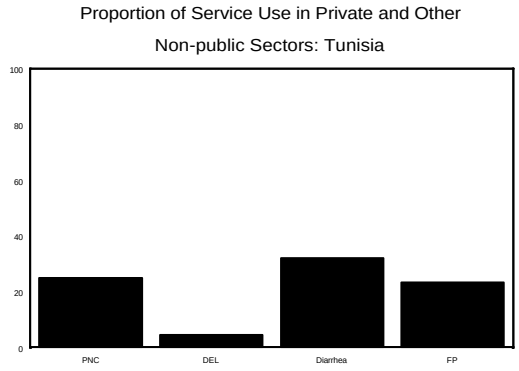
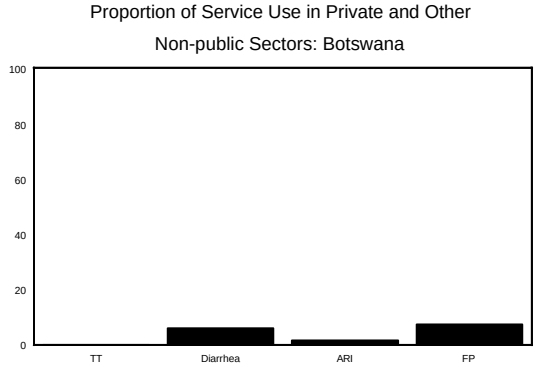

Source of Family Planning Services
100
80
60
40
20
0
BOL
COL
GUT
PAR
BOT
KEN
SUD
UGA
IND
MOR
TUN
Legend
Public
Private
Other

FIGURE 5

Variation in Private Provisions Across Countries - Group I







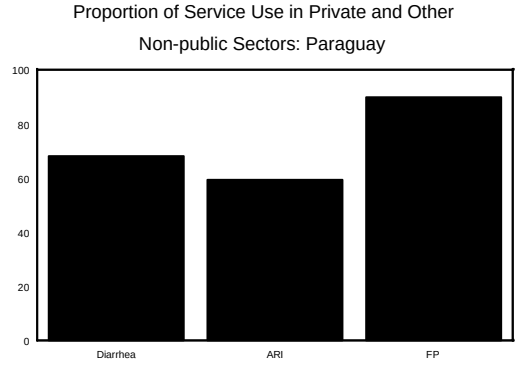
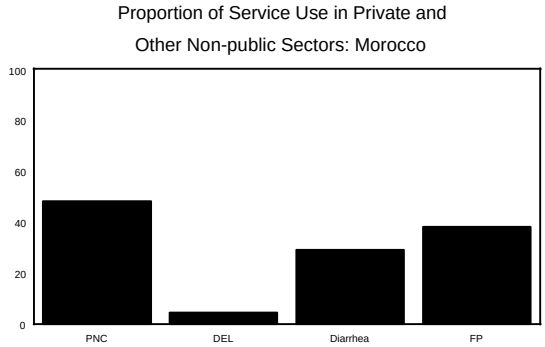
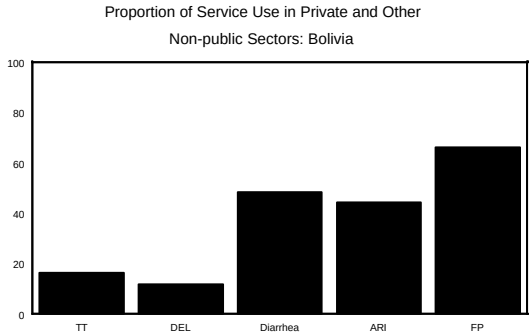
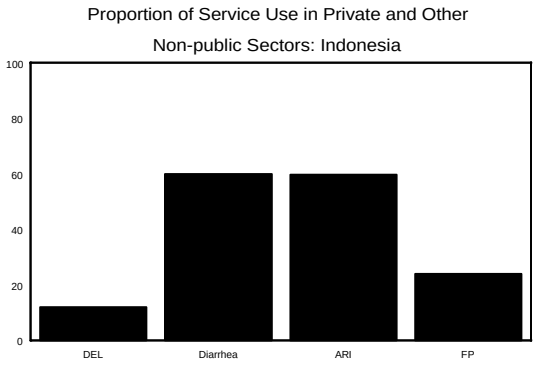


FIGURE 6

Variation in Private Provisions Across Countries - Group II







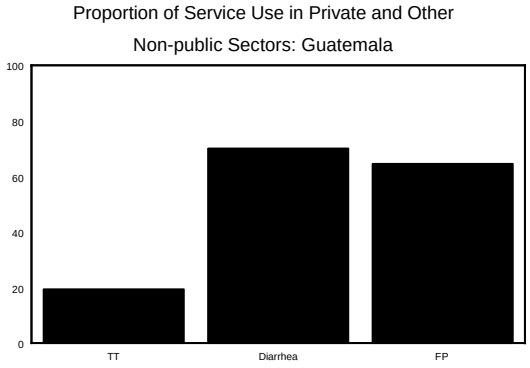
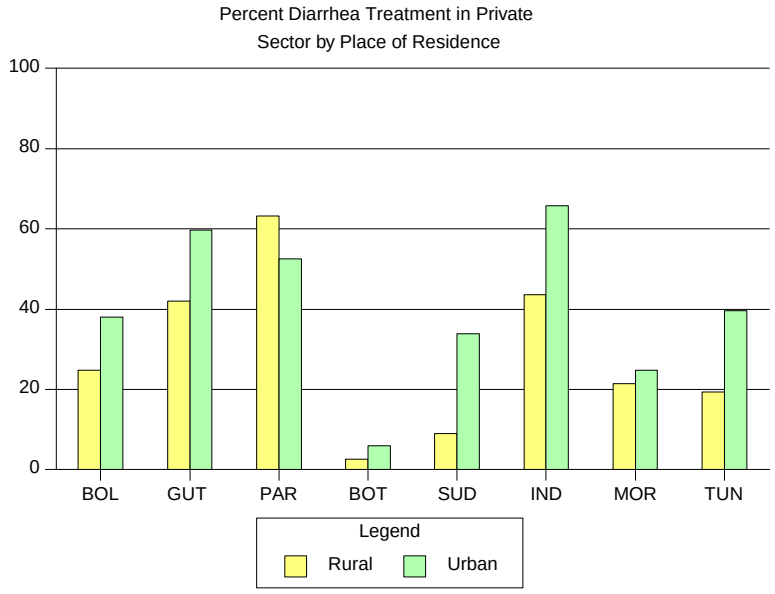
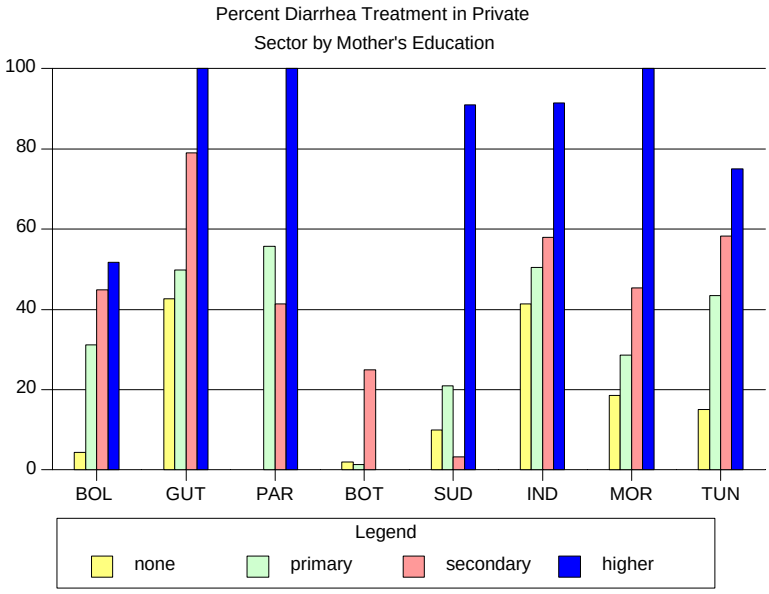
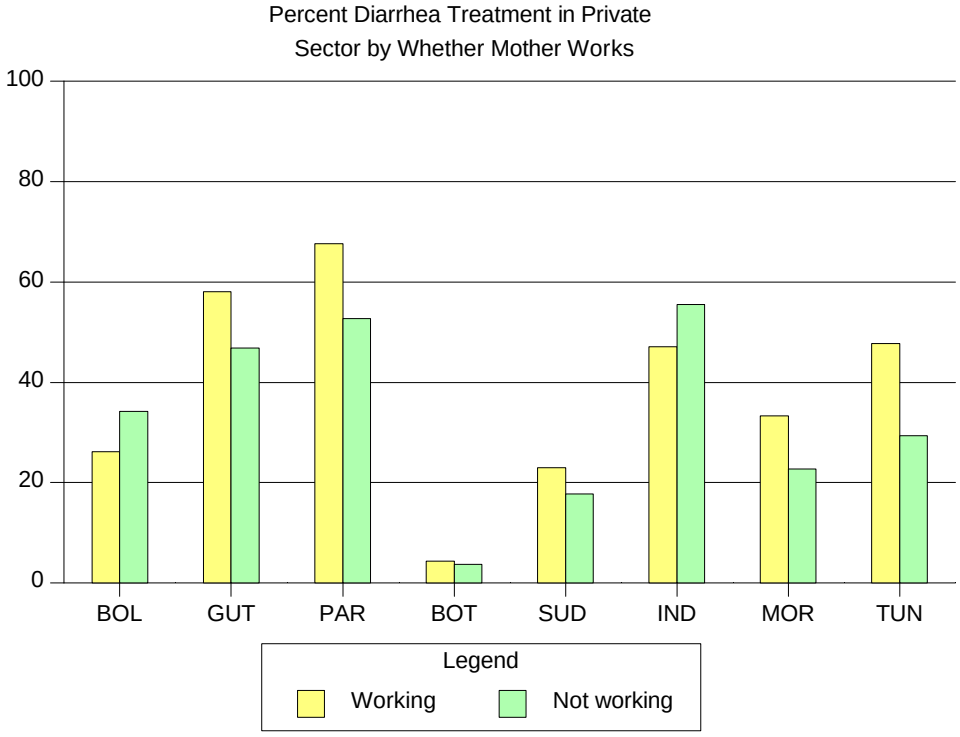


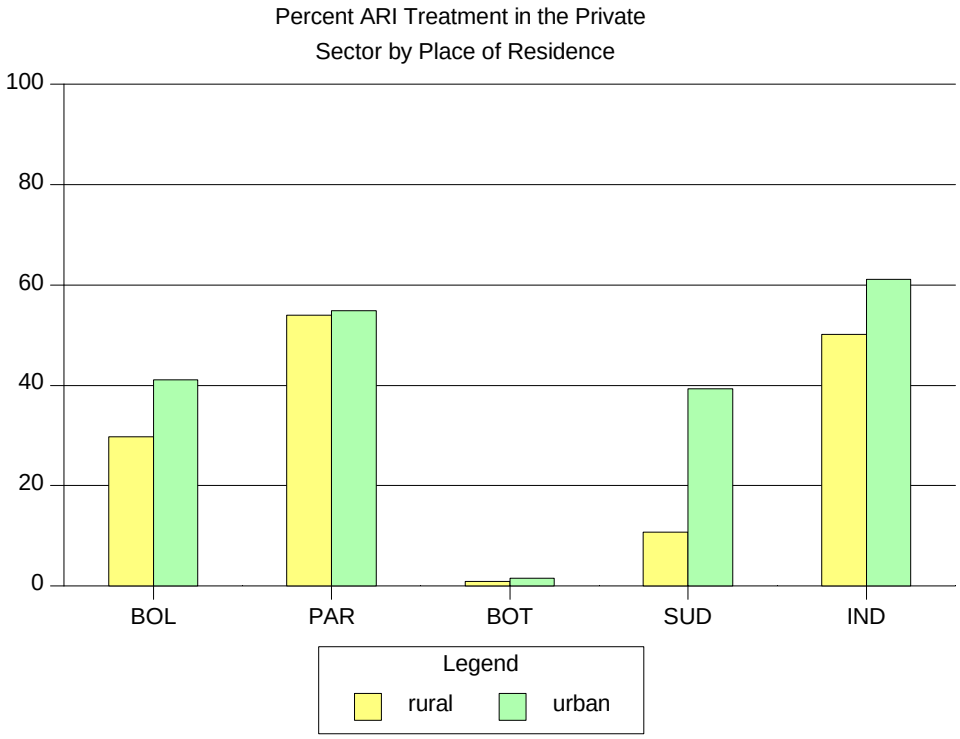
FIGURE 7

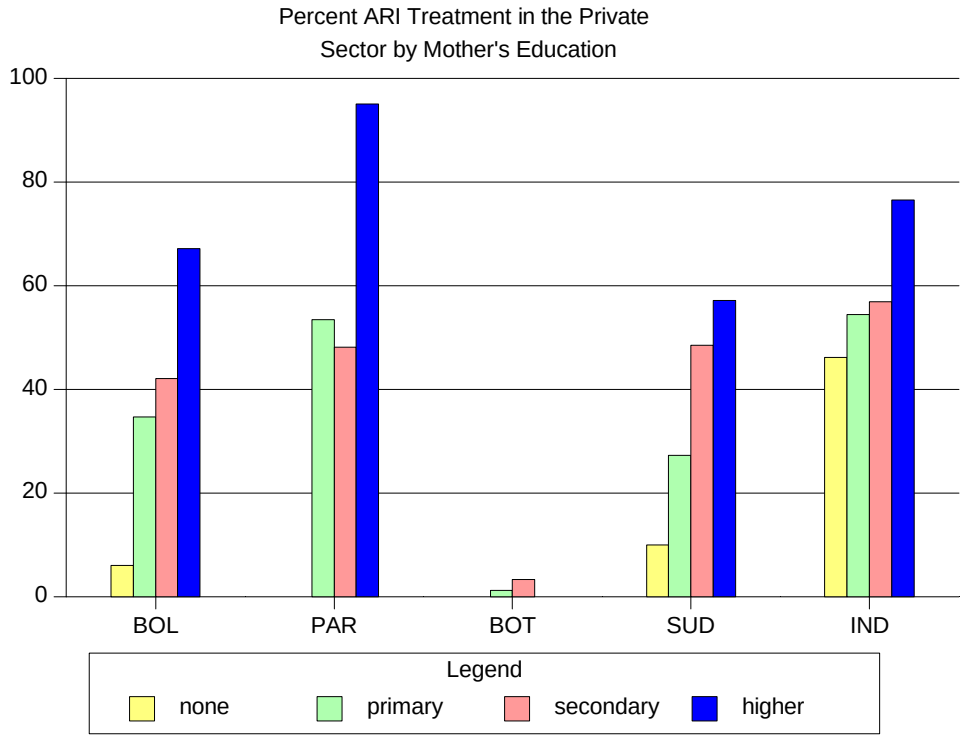
Percent Treatment of Diarrhea and ARI by Place of Residence, Mother's Level of Education, and Mother's Work Status

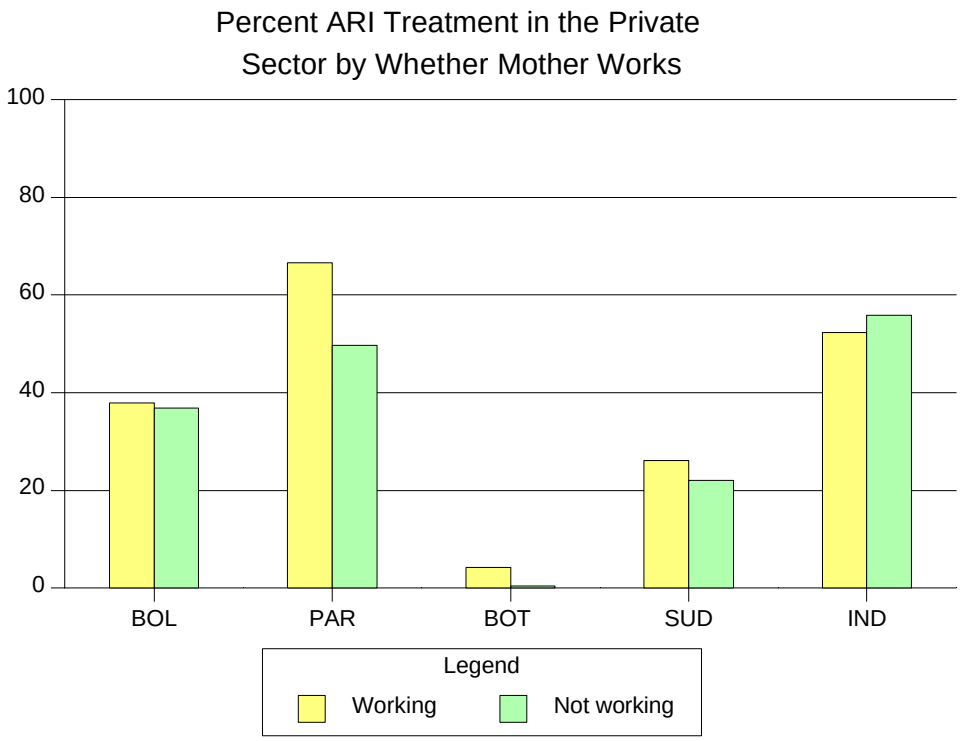





Percent Diarrhea Treatment in Private Sector by Whether Mother Works
100
80
60
40
20
0
BOL
GUT
PAR
BOT
SUD
IND
MOR
TUN
Legend
Working
Not working


Percent ARI Treatment in the Private Sector by Place of Residence
100
80
60
40
20
0
BOL
PAR
BOT
SUD
IND
Legend
rural
urban


Percent ARI Treatment in the Private Sector by Mother's Education
100
80
60
40
20
0
BOL
PAR
BOT
SUD
IND
Legend
none
primary
secondary
higher


Percent ARI Treatment in the Private Sector by Whether Mother Works
100
80
60
40
20
0
BOL
PAR
BOT
SUD
IND
Legend
Working
Not working